

10/578602

AP20 Rec'd PCT/PTO 08 MAY 2006

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant: Steffen Hardt  
International Application No.: PCT/EP2004/012650  
International Filing Date: 09 November 2004  
For: METHOD FOR SEPARATING CHEMICAL  
SUBSTANCES AND/OR PARTICLES, DEVICE AND  
USE THEREOF  
Date: May 8, 2006

Mail Stop PCT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

This invention relates to electric fields applied parallel to and/or vertical to the interfaces on adjacent microfluid lamellae made of nonmiscible media containing said biomolecules and bioparticles to which they have different physico-chemical affinities in order to separate biomolecules and bioparticles and the biomolecules and bioparticles are electrophoretically separated.

As authorized and encouraged under 37 C.F.R. §1.97-1.99, applicant hereby cites as a means of complying with the duty of disclosure set forth in 37 C.F.R. §1.56, the following patents and/or documents, required copies enclosed, which the Examiner should consider with respect to the above-identified United States Patent Application:

FOREIGN DOCUMENTS		
PATENT/DOCUMENT NO.	DATE	COUNTRY
37 42 292	06/01/1989	DE
00/22428	04/20/2000	WIPO
199 30 253	12/28/2000	DE
694 27 690	05/02/2002	DE
100 63 096	09/12/2002	DE
101 13 257	11/14/2002	DE
03/066191	08/14/2003	WIPO
1 353 172	10/15/2003	EP
OTHER PRIOR ART/ARTICLE		
C.W. Theos et al., <i>Electroextraction Two-Phase Electrophoresis, Applied Biochemistry and Biotechnology</i> , Vol. 54, (1995), pp. 143-157.		
S. Devasenathipathy, et al., <i>Electrokinetic Particle Separation</i> , 7 <sup>th</sup> International Conference on Miniaturized Chemical Biochemical Analysis Systems, October 5-9, 2003, pp. 845-848.		
T. Herweck, et al., <i>Visualization of Flow Patterns and Chemical Synthesis in Transparent Micromixers</i> , Microreaction Technology, Proceedings of the Fifth International Conference on Microreaction Technology, 2001, pp.215-229.		
V. Reddy, et al., <i>Organic/Aqueous Two Phase Microflow for Biological Sample Preparation</i> , 7 <sup>th</sup> International Conference on Miniaturized Chemical and Biochemical Analysis Systems, October 5-9, 2003, pp. 437-440.		
C.-L. Liu, et al., <i>Partitioning of Proteins Using Two-Phase Aqueous Surfactant Systems</i> , AIChE Journal, April 1995, Vol. 41, No. 4, pp.991-995.		
V.G. Gaikar, et al., <i>The Effect of Surface Active Additives on the Partitioning of Proteins and Enzymes in Aqueous Two-Phase Systems</i> , J. Chem. Tech. Biotechnol., 1996, Vol. 67, pp. 329-332.		
D. Raymond, et al., <i>Continuous Sample Pretreatment Using a Free-Flow Electrophoresis Device Integrated onto a Silicon Chip</i> , Analytical Chemistry, 1994, Vol. 66, No. 18, pp. 2858-2864, XP-000478030.		
F. Hachem, et al., <i>Hydrophobic Partitioning of Proteins in Aqueous Two-Phase Systems</i> , Enzyme and Microbial Technology, Vol. 19, 1996, pp. 507-517, XP-002316648.		

**10/578602**

**1AP20Rec'd PCT/PTO 08 MAY 2006**

In accordance with 37 CFR 1.98(a)(2)(i) only the foreign and non-patent documents are required for the express purpose of providing the Patent and Trademark Office with an ample opportunity to evaluate the same and to arrive at an independent assessment of its materiality, if any, with regard to the examination of the application.

An examination of the present application considering the above documents is requested.

Respectfully submitted,

HUDAK, SHUNK & FARINE CO. LPA

  
Daniel J. Hudak, Jr.  
Registration No. 47,669

DJHjr/lb  
2020 Front Street  
Suite 307  
Cuyahoga Falls, OH 44221-3257  
(330) 535-2220  
Attorney Docket No.: FMW-CP-PCT-US

AP20 Rec'd PCT/PTO 08 MAY 2006

Sheet 1 of 3

Form PTO-1449		U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No.:  FMW-CP-PCT-US		Serial No. <b>10/578602</b>	
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)				Applicant: Steffen Hardt			
				Filing Date: May 8, 2006		Group:	

  

U.S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing date if appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

  

FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation Yes No
	AL	37 42 292	06/01/1989	DE			
	AM	00/22428	04/20/2000	WIPO			
	AN	199 30 253	12/28/2000	DE			
	AO	694 27 690	05/02/2002	DE			
	AP	100 63 096	09/12/2002	DE			

  

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)			
	AR	C.W. Theos et al., <i>Electroextraction Two-Phase Electrophoresis, Applied Biochemistry and Biotechnology</i> , Vol. 54, (1995), pp. 143-157.	
	AS	S. Devasenathipathy, et al., <i>Electrokinetic Particle Separation</i> , 7 <sup>th</sup> International Conference on Miniaturized Chemical Biochemical Analysis Systems, October 5-9, 2003, pp. 845-848.	
	AT	T. Herweck, et al., <i>Visualization of Flow Patterns and Chemical Synthesis in Transparent Micromixers</i> , Microreaction Technology, Proceedings of the Fifth International Conference on Microreaction Technology, 2002, pp.215-229.	

  

EXAMINER	/Jennifer Dieterle/	DATE CONSIDERED	08/26/2010
----------	---------------------	-----------------	------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1AP20Rec'd PCT/PTO 08 MAY 2006

Sheet 2 of 3

Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No.: FMW-CP-PCT-US		Serial No.: 10/578602	
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)		Applicant: Steffen Hardt			
		Filing Date: May 8, 2006		Group:	

  

U.S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing date if appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

  

FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation Yes No
	AL	101 13 257	11/14/2002	DE			
	AM	03/066191	08/14/2003	WIPO			
	AN	1 353 172	10/15/2003	EP			
	AO						
	AP						

  

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)		
AR		V. Reddy, et al., <i>Organic/Aqueous Two Phase Microflow for Biological Sample Preparation</i> , 7 <sup>th</sup> International Conference on Miniaturized Chemical and Biochemical Analysis Systems, October 5-9, 2003, pp. 437-440.
AS		C.-L. Liu, et al., <i>Partitioning of Proteins Using Two-Phase Aqueous Surfactant Systems</i> , AIChE Journal, April 1995, Vol. 41, No. 4, pp.991-995.
AT		V.G. Gaikar, et al., <i>The Effect of Surface Active Additives on the Partitioning of Proteins and Enzymes in Aqueous Two-Phase Systems</i> , J. Chem. Tech. Biotechnol., 1996, Vol. 67, pp. 329-332.

EXAMINER	Jennifer Dieterle/	DATE CONSIDERED	08/26/2010
----------	--------------------	-----------------	------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. //J.D./

AP20Rec'd PCT-PTO 08 MAY 2006

Sheet 3 of 3

Form PTO-1449		U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No.: FMW-CP-PCT-US		Serial No. <b>10/578602</b>	
LIST OF PRIOR ART CITED BY APPLICANT (Use several sheets if necessary)				Applicant: Steffen Hardt			
				Filing Date: May 8, 2006		Group:	

  

U.S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing date if appropriate
		AA					
		AB					
		AC					
		AD					
		AE					
		AF					
		AG					
		AH					
		AI					
		AJ					
		AK					

  

FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation Yes No
		AL					
		AM					
		AN					
		AO					
		AP					

  

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)		
AR		D. Raymond, et al., <i>Continuous Sample Pretreatment Using a Free-Flow Electrophoresis Device Integrated onto a Silicon Chip</i> , Analytical Chemistry, 1994, Vol. 66, No. 18, pp. 2858-2864, XP-000476030.
AS		F. Hachem, et al., <i>Hydrophobic Partitioning of Proteins in Aqueous Two-Phase Systems</i> , Enzyme and Microbial Technology, Vol. 19, 1996, pp. 507-517, XP-002316648.
AT		

  

EXAMINER	DATE CONSIDERED	
	08/26/2010	
/Jennifer Dieterle/		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.